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Using Health Belief Model to Reduce Obesity Amongst African American and Hispanic Populations

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Abstract

Many health problems such as hypertension, obesity, and diabetes are associated with unhealthy lifestyles, and drastically higher for low income minority populations. The Health Belief Model (HBM) assists practitioners in explaining and predicting health behaviors within its clients. 209 faith-based participants from 15 churches participated in a 16-week program, Village HeartBEAT, which integrated the HBM through one-on-one Health Coaching (HC) sessions. 16 individuals participated in the HC aspect of the program, averaging 2 sessions within the 16-week program. HC participants lost 3.60% of total weight, compared to 1.57% of those who did not attend HC, averaging 7lbs lost vs. 4lbs of non-HC participants. Total program participation of all programs for those who participated in HC averaged 15 per person, vs. 5 of non-HC participants. The findings suggest that the HBM needs to be integrated in preventive health programming to ensure adherence and success of the participants.

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1. Introduction

Despite promising gains in the overall health in the world, the health of many continues to lag behind that of the general population. Healthcare cost continues to rise worldwide due to the prevalence of modifiable risk behaviors and poor lifestyle habits are also rising. Many of these health problems associated with unhealthy lifestyle choices are hypertension, obesity, and diabetes are increased for low-income minority populations (Arias, 2007; Mokdad et al., 2004; National Center for Health Statistics, 2009).

People of lower socioeconomic status, racial, and ethnic minorities tend to experience poor health, challenges in accessing quality healthcare, and experience a higher mortality rate than individuals of a higher socioeconomic

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status or Caucasians. In comparison to Caucasians, African-Americans were: 1.3 times more likely and Hispanics were 1.7 times to report no physical activity outside of normal work; 1.3 times self-reporting of being overweight or obese. High blood pressure is also more prevalent among minorities (38% African American adults vs. 28% Caucasians adults). This may be due to when working with African American and Hispanic populations, wellness programming must be targeted to the relevant cultural, spiritual, and community factors (Campbell & Quintiliani, 2006) to be effective. This is where Health Coaching can be successful.

Within the arena of preventative health programming, recent studies have shown the importance of maintaining healthy lifestyle habits (Deckelbaum et al., 1999). To do so, it is important to shape and change the culture of the individual. In order to create change, there must be a good enough reason that outweighs the trouble and turbulence associated with giving up old habits (Burke, 2009). The benefit of preventative wellness programming must provide an incentive and increase the participant's preparedness to change his/her habits in relation to health (Madsen, 2003).

Integrating the Health Belief Model (HBM) through one-on-one Health Coaching sessions may assists practitioners in explaining and predicting health behaviors within its clients. The HBM is a combination of health education and specific interventions that are designed to promote change to healthy lifestyles.

2. Methods

2.1. Village HeartBEAT

Johnson C. Smith University (JCSU) and various community health organizations partnered to implement and coordinate a prevention and wellness program that focuses on chronic disease prevention among African American and Hispanic populations, it was named Village Heart BEAT (Building Education and Accountability Together). Village HeartBEAT (VHB) is a 16-week program based off of the Holistic Wellness model, which focuses on the importance and the interrelation of a healthy lifestyle within the multidimensional domains of an individual's life. This program incorporated a variety of free program offerings, which included: weight management, group exercises classes, water fitness, healthy living seminars, health coaching, monthly team challenges, and free access to JCSU's HealthPlex. The HealthPlex is the JCSU's applied research center for health, human performance, and sport. The HealthPlex also is home to the Wellness Department, which is dedicated to promoting a culture of wellness and prevention that encourages individuals to assume responsibility for their own quality of life, motivate them to practice healthy lifestyles, and provide education and resources to achieve health and wellness goals. This is done by offering a free fitness facility and hosting free campus and community wellness programming.

2.2. Health Belief Model

The HBM became one of the most widely recognized conceptual frameworks for creating healthy behaviors by focusing on positive behavioural change at the individual level. The HBM is designed to assist in explaining and predicting preventive health behavior. It focuses on the individual's motivation to undertake a health behavior can be divided into three main categories: individual perceptions, modifying behaviors, and likelihood of action (Rosenstock, 1974). This is done by self-identifying:

- Perceived Susceptibility
- Perceived Seriousness
- Perceived Benefits of Taking Action
- Barriers to Taking Action
- Cues to Action

THE HBM was selected because it has been one of the first theories of health behavior and remains one of the most widely recognized in the health promotion field.

2.3. Health Coaching

Health Coaching (HC) is a relatively new behavioural intervention that has gained popularity in public health because of its ability to address multiple unhealthy behaviors, with emphasis on self-management. All HC participants underwent an initial consultation which took approximately 30 - 45 minutes to complete where each participant was required to self-identify their own:

- goals;
- actions steps to complete their goal;
- known barriers to completing their goal;
- level of commitment to each goal, using a 1-10 scale.

The number of goals, action steps, and perceived barriers where different for each participant as they were self-identified based on the participant's perceived health status and commitment level to change. Each participant then was to meet with their coach on a bi-weekly basis for 16 weeks to talk about their two weeks of behavior as it reflects their goals, action steps, barriers that came up to completing their action steps, and created new cues for action. This continued until each personal goal was completed, or until the end of the program.

2.4. Participants

This program targeted African American and Hispanic men and women between the ages of 18 and 80 focusing on the prevention and mitigation of cardiovascular disease. Participants were selected to participate in VHB if they have one of the following conditions; overweight or obese, high blood pressure, high cholesterol, diabetic or a member of family with a history of heart disease, or currently smoke. Participants were from 30 different communities within the Northwest Corridor of Charlotte, North Carolina, USA. This community has lower rates of household income and homeownership than the rest of city. In addition, the Northwest Corridor has lower high school completion rates and higher crime rates than the average Charlotte neighbourhood. There were 209 program participants that registered for the program form 15 different faith based organizations, with only 108 completing the pre and post assessment. Data of non HC participants that did not complete the post-assessment were removed from this study. The majority of participants were women (n=70), 96.51% (n=83) identified as African American, with the other 3.49% (n=3) identifying as Hispanic, ages 23-76 (m=53.75).

3. Results

16 individuals participated in the HC aspect of the VHB program averaging 1.63 sessions attended within the 16-week program. HC participants lost 3.60% (7lbs) of their total weight, compared to 1.57% (4lbs) of those who did not attend HC, reducing the mean BMI to 32.77 from 34.61 (-1.83). The occurrences of hypertension, diabetes, and hypercholesterolemia showed no significant differences from pre-assessment to post-assessment. Body fat percentage of HC participants dropped an average of 3.34% per participant, where only 0.27% per non-HC participant (see Table 1).

Table 1. Comparing Pre-Assessment and Post-Assessment health data of HC Participants and Non-HC Participants

Variable	Health Coaching Participants (N=16)			Non-Health Coaching Participants (N=92)		
	Pre-Assessment	Post-Assessment	Difference	Pre-Assessment	Post-Assessment	Difference
Weight (lbs.) (m)	212.29	201.88 (n=10)	-10.41	206.32	202.45 (n=92)	-3.87
BMI (m)	34.61	32.77 (n=10)	-1.84	33.09	32.73 (n=92)	-0.34
WHR (m)	0.87	0.89 (n=7)	0.02	0.87	0.87 (n=75)	0

Blood Pressure (mm/Hg) (m)	140/85	133/87 (n=7)		139/86	133/84 (n=76)	
Body Fat (%) (m)	39.01	35.67 (n=7)	-3.34	37.57	37.30 (n=76)	-0.27
Hypertension (%)	43.75	50.00 (n=8)	6.25	54.45	55.85 (n=77)	1.40
Diabetes Mellitus (%)	31.25	37.50 (n=8)	6.25	26.09	12.98 (n=77)	-13.11
Hypercholesterolemia (%)	37.50	25.00 (n=8)	-12.50	28.26	28.57 (n=77)	0.31

Total VHB program participation for those who participated in HC was three times that of non-HC participants, mean =14.06 per person vs. mean = 5.37 respectively. VHB sub-component program usage was also increase for weight management (m=1.13 vs. m=0.46), group exercise classes (m=1.94 vs. m=0.51), and water fitness (m=0.94 vs. m=0.48). Non-HC participants averaged slightly higher usage rates in the team challenges (see Table 2).

Table 2. Comparing total average participation usage data per HC Participant vs. Non-HC Participants

Variable	Health Coaching Participants (n=16)	Non-Health Coaching Participants (n=92)
Total Program Participation	14.06	5.37
HealthPlex Visits	8.00	3.26
Health Coaching	1.63	0.00
Weight Management	1.13	0.46
Group Exercise Classes	1.94	0.51
Water Fitness	0.94	0.48
Health Living Seminar	0.00	0.01
Team Challenge	0.31	0.57

4. Conclusion

The VHB program, when combined with the HBM through HC showed success in gradually increase PA through the 16-week program and a reduction in unhealthy eating habits which lead to an increase of weight loss and reduction in body fat percentage when compare to those who did not participate in HC. This could be related to the increase in overall VHB program participation of those who attended HC. The HBM makes each individual identify their goals, actions steps, barriers, and commitment level to each goal. This creates program buy-in and intrinsic motivation for HC participants that non-HC participants may not have, or where not able to develop do to the lack of identification.

Most programs directed at creating healthy lifestyle behaviors changes that affect one's health are usually 8-12 weeks in length, however regardless of the positive behavior changes that might have happened during that time, the highest rate of relapse is seen very early after the change (Institute of Medicine. 2001). This leads to increasingly more overweight or obesity adults trying to lose weight through increased acute unhealthy amounts of physical activity (PA), instead of reducing their caloric intake through a healthful diet and a gradual increase in PA.

Health concerns such as hypertension, diabetes, and hypercholesterolemia take longer to respond to non-pharmacological interventions such as the VHB program. This shows in the data. This leads to the argument that health promotion programs need to increase duration beyond the typical 8-12 week duration, as well as integrate the HBM into programming to ensure program participants long term adherence to healthy lifestyle adaptations.

This is incredibly difficult when working with African American and Hispanic populations. There has been able amount of research that shows both, African Americans and Hispanics present mixed feelings about healthy weight perception and possess a strong culture of unhealthy eating habits. This makes successfully implementing and maintaining healthy lifestyle within these populations difficult. With the use of the HBM and intervention from their

respective faith based institution, healthy lifestyle behaviors can be created and maintained in African American and Hispanic populations.

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